VERSION WITH MARKINGS TO SHOW CHANGES

1. (Twice Amended) A yarn comprising a plurality of staple fibers chosen from the group consisting of non-metallic, **non-carbonized** conductive staple fibers, quasi-conductive staple fibers and mixtures of non-metallic, **non-carbonized** conductive and quasi-conductive staple fibers, the fibers from this group making up at least about 35 percent by weight of the staple fibers in the yarn.

4. (Twice Amended) The yarn of claim 1, wherein the plurality of staple fibers comprises at least some non-metallic, **non-carbonized** conductive staple fibers.

5. (Twice Amended) The yarn of claim 4, wherein the individual non-metallic, **non-carbonized** conductive staple fibers have a DC linear resistance less than about 10^9 ohms per centimeter.

8. (Twice Amended) The yarn of claim 5, wherein at least some of the non-metallic, **non-carbonized** conductive staple fibers comprise carbon-loaded polymer.

9. (Twice Amended) The yarn of claim 5, wherein at least some of the non-metallic, **non-carbonized** conductive staple fibers comprise polymer loaded with antimony-doped tin oxide.

10. (Twice Amended) The yarn of claim 5, wherein at least some of the non-metallic, **non-carbonized** conductive staple fibers comprise non-conductive polymer and are solution-coated with one or more electrically-conductive polymers.

11. (Twice Amended) The yarn of claim 5, wherein at least some of the non-metallic, **non-carbonized** conductive staple fibers comprise inherently-conductive polymer.

12. (Twice Amended) The yarn of claim 5, wherein at least some of the non-metallic**, non-carbonized** conductive staple fibers are bicomponent staple fibers.

101. (Amended) The yarn of claim 1, wherein the yarn **exhibits** [possesses] **a corona current of at least about 0.3 X 10^{-4} amps** [a significant corona current] upon application of [an appropriate] **a** voltage **of about 4000 V** to the yarn.

II. RESPONSE TO OFFICE ACTION

Claims 1, 4, 5, 8, 9, 10, 11, 12 and 101 have been amended.

New dependent claims 102-112 have been added. Support for new claims 102-104 and 110-112 may be found on page 8, lines 5-8 of the present application. Support for new claim 105 may be found on page 9, lines 20-27 of the present application. Claims 15-18, which the Examiner has indicated would be allowable if rewritten in independent form, have now been cancelled and rewritten in independent form as new claims 106-109. .

Claims 1-5, 8-29 and 101-112 are pending.

Claim Rejections – 35 USC § 112

Claim 101 stands rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite. Claim 101 has now been amended as to resolve the indefiniteness issues raised by the Examiner.

Claim Rejections – 35 USC § 102(b)

A. US 4,756,941 to McCullough

Claims 1-5 and 8 stand rejected as anticipated by US 4,756,941 to McCullough. McCullough's disclosure appears to generally describe the preparation of an electroconductive

tow or yarn or thin fluff-like web, for use in carpet backing. McCullough, at col. 2, lines 44-64. Such material is said to comprise stabilized petroleum pitch, coal tar pitch, or a synthetic fiber forming material that is made electroconductive by the process of carbonization or pyrolysis via heating the material to a carbonizing temperature of 450 to 1000 degrees C. *E.g.,* McCullough, at col. 2, lines 53-62. In light of the claim amendments that have herewith been made, Applicants respectfully submit that McCullough does not anticipate any of the presently remaining claims.

B. US 4,420,534 to Matsui

Claims 1-5, 9, 12-14 and 19-29 stand rejected as anticipated by US 4,420,534 to Matsui *et al.* Matsui discloses a number of continuous bicomponent filaments, and is primarily concerned with methods for producing these filaments.

Applicants respectfully traverse this rejection and suggest that Applicants' prior arguments in Paper No. 9 with respect to Matsui were not understood. The Examiner states in the most recent office action that "Applicant argues that Matsui teaches mixing the bicomponent conductive filaments (or staple fibers) in an amount of only 0.1-10% by weight, rather than the presently claimed at least 35% (Amendment A, page 7, 2nd paragraph)." Office Action (Paper No. 10), at paragraph 10 (underlining added). This is not correct. While Matsui does appear to disclose the mixing of bicomponent conductive filaments in the referenced range of 0.1-10 % by weight, Applicants do not argue that there are disclosed bicomponent conductive staple fibers within that range. Where Matsui states that "the mixed ratio of 10-100% by weight or less than 0.1 % by weight is applicable," Matsui, at col. 14, lines 53-55, Matsui appears to be referencing the use of continuous bicomponent conductive filaments, not the use of bicomponent conductive staple fibers.

As noted previously, Matsui appears to disclose that continuous bicomponent conductive filaments can provide an antistatic property to fiber-containing articles by "mixing" the continuous bicomponent conductive filaments with "other [non-conductive] natural fibers or artificial fibers" of the fiber-containing articles, wherein it is the non-conductive fibers that may be present in the following forms: (i) continuous filament form; (ii) staple form; (iii) non-crimped form; (iv) crimped form; (v) undrawn form; or (vi) drawn form. *See* Matsui, at col. 14, lines 46-51. Matsui would not appear to disclose a yarn having any conductive and/or quasi-conductive staple fibers. Accordingly, Matsui cannot not anticipate the present claims, and the reference in Matsui to a "mixed ratio of 10-100%" is not relevant.

Claim Rejections – 35 USC § 102/103

A. Claim 101 with respect to McCullough and Rodini

Claim 101 stands rejected under § 102(b), or in the alternative, under § 103(a) as being unpatentable over McCullough and Matsui, individually. In light of the above amendment to claims 1 and 101, and the arguments above with respect to McCullough and Matsui, Applicants respectfully submit that claim 101 as amended is allowable and not anticipated.

B. US 5,102,727 to Pittman

Claims 1-5, 10, and 101 stand rejected under § 102(b), or in the alternative, under § 103(a), as being unpatentable over US 5,102,727 to Pittman *et al.* Pittman discloses an electrically conductive fabric having a conductivity gradient. According to Pittman, high conductivity yarns may be constructed from a conductive filament or spun fiber which is plied into a yarn with another, less conductive filament or spun fiber. Pittman, at col. 3, lines 22-25.

Pittman, however, does not disclose the use of conductive staple fibers to construct a yarn, wherein the ratio of such conductive staple fibers to total staple fibers is at least about 35

percent by weight. Pittman's disclosure at col. 3, lines 22-29, to the effect only that "the conductivity of a yarn can be readily varied by, for example, incorporating a greater or lesser number of conductive filaments," is not a specific teaching to construct the claimed yarn having the claim ratio of non-metallic, non-carbonized conductive and quasi-conductive staple fibers to total staple fibers. Accordingly, Applicants respectfully submit that Pittman does not anticipate nor render obvious the present claims.

C. US 5,102,727 to Pittman, in View of Rodini, Matsui and Kinlen

Claims 8, 9, 11-14 and 19-29 stand rejected under § 103(a) as being unpatentable over US 5,102,727 to Pittman, in view of Rodini, Matsui and US 6,228,492 to Kinlen. As discussed above, Pittman does not disclose the claimed yarn wherein the ratio of conductive staple fibers to total staple fibers is at least about 35 percent by weight. For this reason alone, Applicants would respectfully submit that the proceeding § 103(a) rejections premised on Pittman should be withdrawn.

Furthermore, there would be no motivation to combine Pittman with the teachings of any of Rodini, Matsui or Kinlen. In fact, Rodini and Matsui actually teach away from the invention of the present claims, and Kinlen is completely silent concerning the use of stable fibers altogether. For example, Rodini discloses blends of staple fibers including bicomponent sheath-core fibers having a conductive carbon black core. Rodini, however, does not disclose blends wherein at least about 35 percent by weight of the staple fibers present are conductive or quasi-conductive staple fibers. Rather, Rodini teaches away from the present claims by noting that it is preferred to prepare a fiber blend containing from about 1 to 5% by weight bicomponent sheath-core staple fibers. *E.g.,* Rodini, at col. 2, lines 19-23.

Matsui discloses certain bicomponent filaments having a polymeric conductive component made conductive by the use of certain metal oxide particles. The use of a continuous unbroken filament would not suggest the use of staple fibers.

For all of these reasons, Applicants respectfully submit that Pittman in view of Rodini, Matsui or Kinlen does not render the present claims obvious.

D. US 3,690,057 to Norris, in View of Rodini, Matsui and Kinlen

Claims 1, 2, 4, 5, 8-14, 19-29 and 101 stand rejected under § 103(a) as being unpatentable over US 3,690,057 to Norris, in view of Rodini, Matsui and Kinlen. Norris is concerned with a specific process for forming metallized conductive fibers by placing a metallic coating onto a sheet of polymeric film, fibrillating the film to form a web of metallized conductive fibers, and then cutting and further processing the fibers into metallized conductive staple fibers. Norris would appear to disclose a ply yarn comprising a blend of metallized conductive fibers and non-conductive staple fibers, wherein the metallized conductive fibers of the ply yarn make up from at least 1 percent by weight to as high as 50 percent. Although such metallized conductive fibers are not covered by the current claims, the Examiner has taken the position that "it would have been obvious to one skilled in the art to substitute any of the known non-metallic conductive fibers for the metallic conductive fibers of Norris." In support, the Examiner has added only that "[i]t has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use."

Applicants respectfully traverse the Examiner's implicit suggestion that such combination of references is proper, as there has been shown no suggestion or motivation to combine Norris with any of these references. *See, e.g.,* MPEP § 2143.1 ("A statement that

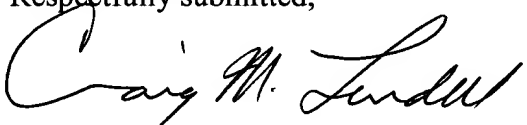
modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.") (emphasis in original).

Moreover, Applicants would also point out that, as discussed previously, the Rodini and Matsui references actually teach away from the present claims. (The Kinlen reference does not even mention staple fibers.) For all of these reasons, Applicants respectfully submit that Norris in view of Rodini, Matsui or Kinlen does not render the present claims obvious.

Conclusions

In view of the foregoing, the present claims are believed to be allowable. The Examiner is invited to contact the undersigned attorney at (713) 787-1415 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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